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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Appln No.: 10/016,699 )  
Filed: December 10, 2001 )  
Applicants: Di-An HONG et al. )  
Title: METHOD AND APPARATUS )  
FOR BIOMETRIC CONTROL OF )  
DISPLAY INDICATOR )  
Art Unit: 2672 )  
Examiner: Faranak FOULADI-SEMNANI )  
Attorney Docket: CM01269I (72468) )  
Customer No.: 22242 )

**Confirmation No. 4412**

**CERTIFICATE OF MAILING**

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11/09/2004  
Date

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**REQUEST FOR REINSTATEMENT OF APPEAL AND  
SUBMISSION OF SUPPLEMENTAL APPEAL BRIEF**

Sir:

The applicant appealed from an earlier final rejection of claims 1 through 13, 21, and 22. Following submission of an Appeal Brief, and pursuant to an Office Action mailed August 9, 2004, the Examiner reopened prosecution and purported to set forth new grounds of rejection with respect to claims 1 through 13.

The applicant hereby respectfully requests reinstatement of the appeal pursuant to 37 C.F.R. 1.193(b)(2) and submits this supplemental appeal brief in support of that request.

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*Unchallenged claims*

The applicant notes that claims 21 and 22 no longer appear to be rejected as they were neither generally nor specifically mentioned or rejected in the aforementioned Office Action. In providing this supplemental appeal brief, the applicant presumes that such claims are deemed allowable by the Examiner and no specific arguments in favor of their allowance are presented.

*The new grounds of rejection for claims 1 through 13*

The Examiner now relies primarily upon a publication by Itou et al.<sup>1</sup> to support a rejection under 35 U.S.C. 193(a)<sup>2</sup> of claims 1 through 13. Itou provides a superficial overview of an EMG-driven cursor movement system. Itou describes attaching a plurality of EMG electrodes to three forearm muscles. EMG signals from those sources are then used to distinguish six specific cursor related actions:

- Up;
- Down;
- Left;
- Right;
- Left click;
- Right click.

Since these are the only cursor movements permitted, acknowledged, or otherwise facilitated by Itou, to reach a specific point on a given display a user must typically combine up/down (i.e., vertical) movement of the cursor with left/right (i.e., horizontal) movement of the cursor. To this extent, then, Itou contributes no teachings beyond those already offered by the previously cited and

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<sup>1</sup> *Mouse Cursor Control System using EMG* published in the 2001 Proceedings of the 23<sup>rd</sup> Annual EMBS International Conference (pages 1368-1369).

<sup>2</sup> Alone or in combination with previously cited Woods et al. (U.S. Patent No. 6,413,190).

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applied Woods reference as Itou, too, teaches only a correlation between specific body signals and a specific correlated direction of movement (i.e., up, down, left, or right). Furthermore, since these are the *only* cursor control signals permitted by Itou, then again in common with Woods Itou combines a pre-correlated direction of movement with *actual* movement; that is, in response to a given EMG input, Itou determines which of four available cartesian directions of movement are directly correlated to that specific input and then begins to also effect movement of the cursor in that identified direction.

As already noted in the previously submitted Appeal Brief, however, claim 1 provides for the sensing of first and second EMG signals followed by, in response to sensing the first EMG signal, establishing an angle of directional movement for an on-screen cursor. Neither Woods nor Itou disclose or suggest any such teaching. Instead, the angle of directional movement as corresponds to a given incoming body signal is pre-established (for example, a first body signal always corresponds to horizontal movement while a second body signal always corresponds to vertical movement).

Quite literally, neither reference, alone or in combination, discloses or suggests that a first EMG signal serve to *establish* an angle of directional movement for an on-screen cursor and that a second EMG signal serve to move that on-screen cursor in a previously determined direction as is required by claim 1. Furthermore, such an approach runs contrary to the essential teachings of these references, as these references correlate both a predetermined direction of movement *and* actual movement in that particular direction with a single EMG input. Requiring a second, subsequently received EMG input to cause movement of the cursor would serve no useful purpose, as their cursors are *already* in motion.

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Therefore, with all due respect, the applicant asserts that claim 1 is not rendered obvious in view of Itou.

Remaining claims 2 through 13 are ultimately dependent upon claim 1, which claim has been shown allowable above. In addition, these claims introduce additional patentable subject matter as corresponds at least to the grouping of claims presented in the previously submitted Appeal Brief. The following comments are supplemental to those earlier expressed positions.

*Group II*

This group comprises dependent claim 2. This claim specifies that the first and second EMG signals introduced in claim 1 are sensed from different muscles. Itou discloses the use of three muscles to provide six distinct inputs. Itou provides no explanation for how this is achieved, however. It appears clear, however, that with only three muscles being available to effect the input of six different discrete cursor movements, it is unlikely there is any one-for-one correlation between movement of a given one muscle and a particular one correlated cursor action. The applicant therefore respectfully submits that, at best, Itou is ambiguous with respect to such a requirement as is set forth in claim 2. The applicant therefore again respectfully urges the allowability of claim 2.

*Group III*

This group comprises dependent claims 3 and 4. These claims further specify that, upon establishing an angle of directional movement for the on-screen cursor as is set forth in claim 1, an on-screen directional indicator is rotated in a manner that corresponds to the established angle of directional movement. For example, if the established angle is 45 degrees, then the on-screen directional indicator would be rotated to point at this angle. Claim 4 further specifies that the cursor itself can comprise this on-screen device.

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Itou makes no suggestion or teaching in this regard. The Examiner suggests that, "It is clear to change the direction of move for example from left to right or up to down the angle of direction of movement should be rotated to accommodate this directional change." The applicant vigorously disputes this unsupported and casual observation. There is nothing in the record to support that such a thing "should" be done. Instead, ordinary cursor movement, even when the cursor has what appears a directional orientation to it (such as when the cursor comprises an arrowhead), does not entail rotation of that cursor to correspond to a direction of movement of the cursor. Instead, if anything, the directional orientation of the cursor is ordinarily intended to aid the viewer in understanding a screen element that the cursor is presently positioned to interact with. Furthermore, since prior art practice, including that presented by both Woods and Itou, provides for immediate movement of a cursor in response to a cursor input, there is no special need to further indicate a direction of movement of the cursor, as the viewer can actually immediately perceive that direction of movement *because the cursor is actually moving in the presently effective direction of movement.*

In the case of the applicant's approach, establishing an angle of movement occurs prior to when the user effects movement of the cursor. It therefore becomes useful to portray the presently effective direction of movement. In the case of the prior art, however, such a provision would serve no purpose whatsoever, as movement of the cursor is immediate and such movement inherently informs the viewer of the direction of movement.

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The applicant therefore observes that there would be no motivation to cause a skilled artisan to make such a modification to Itou. The applicant therefore respectfully avers that claims 3 and 4 are not rendered obvious in view of Itou.

Respectfully submitted,

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November 9, 2004

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